

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

1. (Currently Amended) A starting clutch, comprising:  
a planetary mechanism;  
a first clutch that outputs a torque to an outer diameter portion of said planetary mechanism;  
a second clutch that outputs the torque to an intermediate portion of said planetary mechanism; and  
a lock mechanism that locks a reactive force from an inner diameter portion of said planetary mechanism, wherein a ring gear of said planetary mechanism is connected to a clutch case of said second clutch and an output shaft is connected through a carrier of said planetary mechanism to a hub of said second clutch; and  
a hill holder mechanism,  
wherein said hill holder mechanism uses the hub of the second clutch or said carrier as an outer ring, and a sun gear or a member connected to the sun gear as an inner ring.

2. (Currently Amended) A starting clutch according to claim 1 or 28, wherein said planetary mechanism comprises a planetary gear.

3. (Currently Amended) A starting clutch according to claim 1 or 28, wherein the lock mechanism comprises a one-way clutch.

4. (Currently Amended) A starting clutch according to claim 1 or 28, wherein a multi-plate clutch is used for said first clutch and said second clutch.

5. (Previously Presented) A starting clutch according to claim 4, wherein a piston fastens said first clutch and said second clutch.

6. (Previously Presented) A starting clutch according to claim 4, wherein a hub of said first clutch is also the clutch case of said second clutch.

7. (Previously Presented) A starting clutch according to claim 2, wherein said starting clutch comprises a case that covers the planetary mechanism and a clutch case that covers said first clutch, wherein a bearing mechanism intervenes between said case and said clutch case.

8. (Previously Presented) A starting clutch according to claim 4, wherein a bearing mechanism intervenes between a clutch case of said first clutch and the hub.

9. (Original) A starting clutch according to claim 4, wherein a bearing mechanism intervenes between the clutch case of said second clutch and the hub.

10. (Previously Presented) A starting clutch according to claim 2, wherein a bearing mechanism intervenes between said clutch case of said second clutch and the planetary gear.

11. (Original) A starting clutch according to claim 7, wherein said bearing mechanism is a thrust washer, a needle bearing or a thrust ball bearing.

12. (Withdrawn) A starting clutch according to claim 2, further comprising an output shaft, wherein a bearing is intervened between said output shaft and said planetary gear.

13. (Previously Presented) A starting clutch according to claim 2, wherein a hub of said first clutch is connected to a ring gear of said planetary gear.

14. (Original) A starting clutch according to claim 2, wherein the hub of said second clutch is connected to a carrier of said planetary gear.

15. (Currently Amended) A starting clutch according to claim 1 or 28, wherein said output shaft is connected to said carrier.

16. (Previously Presented) A starting clutch according to claim 2, wherein a base member has a portion that is also an inner ring of a one-way clutch and is connected to a fixed element.

17. (Previously Presented) A starting clutch according to claim 13, wherein the hub of said first clutch and the ring gear are connected by a spline fitting.

18. (Previously Presented) A starting clutch according to claim 2, wherein an outer ring portion of a one-way clutch is formed on a sun gear or an inner periphery portion of a member connected to the sun gear.

19. (Withdrawn) A starting clutch according to claim 16, wherein the fixed element and the planetary gear are arranged on an outer periphery side of the output shaft and said base member and said one-way clutch are arranged on an outer periphery of said fixed element and, furthermore, said second clutch is arranged on an outer periphery side of said one-way clutch and said first clutch is arranged on an outer periphery side of said second clutch, respectively, and are covered by a case.

20. (Currently Amended) A starting clutch according to claim 1 or 28, wherein a fixed element and a planetary gear are arranged on an outer periphery side of an output shaft and a base member and a one-way clutch are arranged on the outer periphery of said fixed element and, furthermore,

said second clutch is arranged on an outer periphery side of said planetary gear and said first clutch is arranged on an outer periphery side of said second clutch, respectively, and are covered by a case.

21. (Currently Amended) A starting clutch according to claim 1 or 28, further comprising a damper mechanism.

22. (Currently Amended) A starting clutch according to claim 21, wherein said damper mechanism includes a retainer plate fixed to said case, a claw member spline-fitted on an outer periphery of a clutch case of the first clutch and a spring intervened between a retainer plate and the claw member.

23. - 26. (Cancelled)

27. (Withdrawn) A starting clutch according to claim 1, wherein an operation of a piston that fastens the first clutch or the second clutch is through an operating mechanism comprising comprises a lever and a release bearing.

28. (Currently Amended) A starting clutch,  
comprising:

a planetary mechanism;

a first clutch that outputs a torque to an outer

diameter portion of said planetary mechanism;

a second clutch that outputs the torque to an

intermediate portion of said planetary mechanism; and

a lock mechanism that locks a reactive force from an

inner diameter portion of said planetary mechanism, wherein

a ring gear of said planetary mechanism is connected to a

clutch case of said second clutch and an output shaft is

connected through a carrier of said planetary mechanism to

a hub of said second clutch, and A starting clutch

according to claim 1, wherein a piston that fastens the

first clutch or the second clutch utilizes a ball screw as

an operating mechanism.

29. (Withdrawn) A starting clutch according to claim  
1, wherein a piston that fastens the first clutch or the  
second clutch uses a release bearing and a ball screw, that  
pushes down the release bearing, as an operating mechanism.

30. (Withdrawn) A starting clutch according to claim 1, wherein a piston that fastens the first or the second clutch operates by oil pressure.

31. (Withdrawn) A starting clutch according to claim 1, wherein a piston that fastens the first clutch or the second clutch operates by oil pressure supplied from a motor-operated pump.

32. (Withdrawn) A starting clutch according to claim 1, wherein an oil pressure circuit including a motor-operated pump is provided that uses an engine pump as an oil pressure source.

33. (Withdrawn) A starting clutch according to claim 32, wherein an oil pressure circuit that includes the oil pressure circuit including said motor-operated pump and said engine pump as an oil pressure source also includes a device that detects the number of engine rotations, the oil pressure circuit comprising a valve to be regulated according to the number of engine rotations detected by said device.

34. (Withdrawn) A starting clutch according to claim 33, further comprising:

a device that detects oil pressure generated by said engine pump; and

a control device that regulates the operation of said motor-operated pump according to oil pressure generated by said engine pump.

35. (Withdrawn) A starting clutch according to claim 32, further comprising an oil temperature detection device, wherein a mechanism regulates an opening amount of a valve by the detected oil temperature.

36. (Withdrawn) A starting clutch according to claim [[5]] 1, wherein the a piston that fastens the first clutch or the second clutch operates by an electromagnet.

37. (Withdrawn) A starting clutch according to claim 1 or 28, wherein an a biasing device is provided that biases a frictionally engaging element of the first clutch to such a degree that a creep torque is generated.

38. (Withdrawn) A starting clutch according to claim 37, wherein a biasing regulating device that regulates a biasing force of said biasing device is provided.

39. (Withdrawn) A starting clutch according to claim 38, wherein said biasing device or biasing regulating device includes a spring member.

40. (Withdrawn) A starting clutch according to claim 39, wherein said spring member is a Belleville spring.

41. (Currently Amended) A starting clutch according to claim 1 or 28, wherein an amplified torque is output by the fastening of said first clutch and said second clutch.

42. (Currently Amended) A starting clutch according to claim 1 or 28, wherein an amplified torque having 1 in a ratio of transmission is output by the fastening of said first clutch and said second clutch.

43. (Currently Amended) A starting clutch according to claim 1 or 28, wherein an operating mechanism of the first or the second clutch is arranged on an outer periphery side of a fixed element.

44. (Currently Amended) A starting clutch according to claim 1 or 28, wherein, when an operating mechanism is completely ON, the first clutch and the second clutch fasten together and, when the operating mechanism is completely OFF, the first clutch and the second clutch are released.

45. (Currently Amended) A starting clutch according to claim 1 or 28, wherein the first clutch fastens or slidably moves in a half operating state intermediate between a completely ON and a completely OFF state.

46. (Currently Amended) A starting clutch according to claim 45, wherein the second clutch slidably moves or is released in said half operating state.

47. (Currently Amended) A starting clutch according to claim 1, wherein a coupled driving rotational element is arranged on an outer periphery of a fixed element and, furthermore, a piston is arranged on the outer periphery.

48. (Withdrawn) A starting clutch according to claim 47, wherein a cylinder and an oil chamber of said cylinder are provided on said coupled driving rotational element.

49. (Withdrawn) A starting clutch according to claim 48, wherein the piston is separated from a frictionally engaging element by the operation of said cylinder.

50. (Withdrawn) A starting clutch according to claim 47, wherein a thrust member for fastening the first clutch and the second clutch by thrusting said piston is provided.

51. (Withdrawn) A starting clutch according to claim 50, wherein said thrust member is a spring member.

52. (Withdrawn) A starting clutch according to claim 51, wherein said spring member intervenes between a support plate supported on an inner periphery of the clutch case of the first clutch by a snap ring and the piston.

53. (Withdrawn) A starting clutch according to claim 47, wherein an oil passage from said fixed element to an oil chamber through said coupled driving rotational element is provided.

54. (Withdrawn) A starting clutch according to claim 53, wherein an oil passage from said output shaft to said oil chamber through said fixed element and said coupled driving rotational element is provided.

55. (Withdrawn) A starting clutch according to claim 47, wherein an outer periphery side of said coupled driving rotational element is closed with an oil seal.

56. (Withdrawn) A starting clutch according to claim 47, wherein the outer periphery of said fixed element is supported by a bearing.

57. (Withdrawn) A starting clutch according to claim 47, wherein the outer periphery side of said fixed element is supported by a seal bearing.

58. (Withdrawn) A starting clutch according to claim 1 or 28, wherein lubricant is supplied from the output shaft to the first clutch, the second clutch, a one-way clutch, and the planetary gear.

59. (Withdrawn) A starting clutch according to claim 58, wherein a lubricant oil supply hole is provided on said output shaft.

60. (Withdrawn) A starting clutch according to claim 47, wherein a lubricant oil supply hole is provided in said fixed element.

61. (Withdrawn) A starting clutch according to claim 59, wherein a lubricant oil passage which communicates with said output shaft from said fixed element is provided.

62. (Withdrawn) A starting clutch according to claim 1 or 28, wherein lubricant is supplied from a gap between said output shaft and a fixed element.

63. (Withdrawn) A starting clutch according to claim 1 or 28, wherein an inside of the clutch case is immersed in oil.

64. (Withdrawn) A starting clutch according to claim 47, wherein the first and the second clutches are fastened when the operating mechanism is completely OFF, and the first and the second clutches are released when the operating mechanism is ON.

65. (Previously Presented) A starting clutch according to claim 47, wherein only the first clutch fastens or slidably moves when an operating mechanism is in a half operating state.

66. (Original) A starting clutch according to claim 46, wherein a creep is generated by said first or the second clutch slidably moving.

67. (Currently Amended) A control method of a starting clutch, the starting clutch comprising:

a planetary mechanism;

a first clutch that outputs a torque to an outer diameter portion of said planetary mechanism;

a second clutch that outputs the torque to an intermediate portion of said planetary mechanism; and

a lock mechanism that locks a reactive force from an inner diameter portion of said planetary mechanism, wherein a ring gear of said planetary mechanism is connected to a clutch case of said second clutch and an output shaft is connected through a carrier of said planetary mechanism to a hub of said second clutch; and

a hill holder mechanism,

wherein said hill holder mechanism uses the hub of the second clutch or said carrier as an outer ring, and a sun gear or a member connected to the sun gear as an inner ring.

the method comprising:

    outputting an amplified torque by the fastening  
of said first clutch and said second clutch.

68. (Currently Amended) A control method of a  
starting clutch according to claim 67 or 97, wherein a  
torque having 1 in a ratio of transmission is output by the  
fastening of said first clutch and said second clutch.

69. (Currently Amended) A control method of a  
starting clutch according to claim 67 or 97, wherein, when  
an operating mechanism is completely ON, the first clutch  
and the second clutch are fastened together and, when the  
operating mechanism is completely OFF, the first clutch and  
the second clutch are released.

70. (Previously Presented) A control method of a  
starting clutch according to claim 69, wherein said first  
clutch is fastened or slidably moved in a half operating  
state intermediate between said completely ON and said  
completely OFF state.

71. (Previously Presented) A control method of a  
starting clutch according to claim 69, wherein said second

clutch is fastened or slidably moved in a half operating state intermediate between said completely ON and said completely OFF state.

72. (Currently Amended) A control method of a starting clutch according to claim 67 or 97, wherein, when an operating mechanism is completely OFF, the first and the second clutches are fastened and, when the operating mechanism is completely ON, the first and the second clutches are released.

73. (Previously Presented) A control method of a starting clutch according to claim 72, wherein said operating mechanism fastens or slidably moves the first clutch only in a half operating state intermediate between said completely ON and said completely OFF state.

74. (Original) A control method of a starting clutch according to claim 70 , wherein a creep is generated by said first clutch slidably moving.

75. (Withdrawn) A starting clutch according to claim 2, wherein the lock mechanism for locking the reactive force from said inner portion comprises a one-way clutch.

76. (Withdrawn) A starting clutch according to claim 5, wherein a bearing mechanism intervenes between the clutch case of said first clutch and the hub.

77. (Withdrawn) A starting clutch according to claim 5, wherein a bearing mechanism intervenes between the clutch case of said second clutch and the hub.

78. (Withdrawn) A starting clutch according to claim 14, wherein said hub and said carrier are connected by a spline fitting.

79. (Withdrawn) A starting clutch according to claim 15, wherein said output shaft and said carrier are connected by a spline fitting.

80. (Withdrawn) A starting clutch according to claim 16, wherein said base member and said fixed element are connected by a spline fitting.

81. (Withdrawn) A starting clutch according to claim 24, wherein the member connected to said carrier is the hub of the second clutch.

82. (Withdrawn) A starting clutch according to claim 25, wherein the member connected to said carrier is the hub of the second clutch.

83. (Withdrawn) A starting clutch according to claim 33, further comprising an oil temperature detection device, wherein a mechanism that regulates an opening amount of the valve by the detected oil temperature is provided.

84. (Withdrawn) A starting clutch according to claim 34, further comprising an oil temperature detection device, wherein a mechanism that regulates an opening amount of the valve by the detected oil temperature is provided.

85. (Withdrawn) A starting clutch according to claim 38, wherein said biasing device or biasing regulating device includes a spring member.

86. (Withdrawn) A starting clutch according to claim 85, wherein said spring member is a Belleville spring.

87. (Withdrawn) A starting clutch according to claim 48, wherein the piston is separated from a frictionally engaging element by the operation of said cylinder.

88. (Withdrawn) A starting clutch according to claim 60, wherein a lubricant oil passage which communicates with said output shaft from said fixed element is provided.

89. (Withdrawn) A control method of a starting clutch according to claim 68, wherein, when the operating mechanism is completely ON, the first clutch and the second clutch are fastened together and, when the operating mechanism is completely OFF, the first clutch and the second clutch are released.

90. (Withdrawn) A control method of a starting clutch according to claim 89, wherein said first clutch is fastened or slidably moved in a half operating state intermediate between said completely ON state and said completely OFF state.

91. (Withdrawn) A control method of a starting clutch according to claim 89, wherein said second clutch is fastened or slidably moved in a half operating state

intermediate between said completely ON state and said completely OFF state.

92. (Withdrawn) A control method of a starting clutch according to claim 68, wherein, when an operating mechanism is completely OFF, the first and the second clutches are fastened and, when the operating mechanism is completely ON, the first and the second clutches are released.

93. (Withdrawn) A control method of a starting clutch according to claim 92, wherein said operating mechanism fastens or slidably moves the first clutch only in a half operating state intermediate between said completely ON state and said completely OFF state.

94. (Withdrawn) A control method of a starting clutch according to claim 90, wherein a creep is generated by said first clutch slidably moving.

95. (Cancelled)

96. (Cancelled)

97. (New) A control method of a starting clutch, the starting clutch comprising:

a planetary mechanism;

a first clutch that outputs a torque to an outer diameter portion of said planetary mechanism;

a second clutch that outputs the torque to an intermediate portion of said planetary mechanism;

a lock mechanism that locks a reactive force from an inner diameter portion of said planetary mechanism, wherein a ring gear of said planetary mechanism is connected to a clutch case of said second clutch and an output shaft is connected through a carrier of said planetary mechanism to a hub of said second clutch, and wherein a piston that fastens the first clutch or the second clutch utilizes a ball screw as an operating mechanism,

the method comprising:

outputting an amplified torque by the fastening of said first clutch and said second clutch.